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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/671,055

09/24/2003

William O. Alger

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6645

7590

09/02/2005

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EXAMINER

LEPISTO, RYAN A

ART UNIT

PAPER NUMBER

2883

DATE MAILED: 09/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

APZ

<b>Office Action Summary</b>	<b>Application No.</b> 10/671,055	<b>Applicant(s)</b> ALGER ET AL.	
	<b>Examiner</b> Ryan Lepisto	<b>Art Unit</b> 2883	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 July 2005.  
 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.  
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-23 is/are pending in the application.  
     4a) Of the above claim(s) 11-14 is/are withdrawn from consideration.  
 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
 6) ☒ Claim(s) 1-10 and 15-23 is/are rejected.  
 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.  
 10) ☒ The drawing(s) filed on 24 September 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \*    c) ☐ None of:  
         1. ☐ Certified copies of the priority documents have been received.  
         2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
         3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
     \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>3/05, 7/05</u> | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election without traverse of Group I and generic claims 1-10 and 15-23 in the reply filed on 28 July 2005 is acknowledged.

### ***Drawings***

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 222.
2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "220" has been used to designate both structural layer and conductive traces.

Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37

CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. **Claims 10 and 21** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 10 recites the limitation "the structural layer." There is insufficient antecedent basis for this limitation in the claim.

Claim 21 recites the limitation "woven fiberglass bundles." There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. **Claims 1-10, 15 and 17-23** are rejected under 35 U.S.C. 102(b) as being anticipated by **Wiener (US 5,524,679)**. Wiener teaches a printed circuit board (Figs. 1-7, column 7 lines 22-24) comprising a matrix material comprising layers of warp strand

fibers (10A-D) and layers of woof strand fibers (11A-D) both of which can be fiberglass (column 5 line 3), optical fibers (12A-F) integrated and embedded in a non-random grid (column 6 lines 52-53) with the matrix materials by being woven in between the strand layers (Fig. 1 for example) and held together by a resin (column 5 lines 32-34, column 6 line 60), forming a bundled layer. The printed circuit board is formed by forming the above structure and curing the stacked layers (column 6 lines 53-58) together using the resin that is impregnated into the structure. The board may then have added plurality of layers of components add to it (Fig. 7, column 7 lines 39-53).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claim 16** is rejected under 35 U.S.C. 103(a) as being unpatentable over Wiener as applied to claims 1-10, 15 and 17-23 above, and further in view of **Petrisko et al (US 5,851,403)** (Petrisko).

Wiener teaches the printed circuit board described above.

Wiener does not teach expressly the fiberglass strand layers being prepreg. Wiener does teach that any desired material having physical properties desired for an application may be employed as the strands with Nicalon being used as an example (column 4 line 67 through column 5 line 2).

Petrisko teaches fiber strands of Nicalon that have been impregnated with a polymer (column 4 lines 29-33).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use a prepreg Nicalon strand taught by Petrisko in the structure taught by Wiener.

The motivation for doing so would have been increase strength by using a material with greatly improved resistance to secondary oxidation and reduction of ohmic loss due to oxidation (Petrisko, column 4 lines 37-39).

### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. All of the following are pertinent to the state of the art: Derik et al (US 3,508,589), Daniel (US 4,234,907), Mori (US 4,761,047), Hofer et al (US 4,772,092), Parker (US 4,885,663), Daniel (US 5,021,928), Daniel (US 5,183,323), Koizumi (US 5,249,105), Wiener (US 5,256,468), Wiener (US 5,208,558), Wiener (US 5,469,895), Parker et al (US 5,568,964), Kiryushev et al (US 6,072,619), Brand et al (US 6,304,700 B1), Uchida et al (US 2004/0042705 A1), Jiang et al (US 6,757,176 B1), Guy (US 6,851,844 B2), Mershon et al (US 2005/0063637 A1), Brist et al (US 6,882,762 B2).

**Contact Information**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ryan Lepisto whose telephone number is (571) 272-1946. The examiner can normally be reached on M-F 7:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font can be reached on (571) 272-2415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

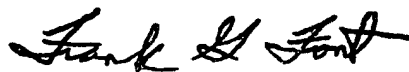
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Ryan Lepisto

Art Unit 2883

Date: 8/25/05



Frank Font

Supervisory Patent Examiner

Technology Center 2800